



IAEA

60 Years

Atoms for Peace and Development

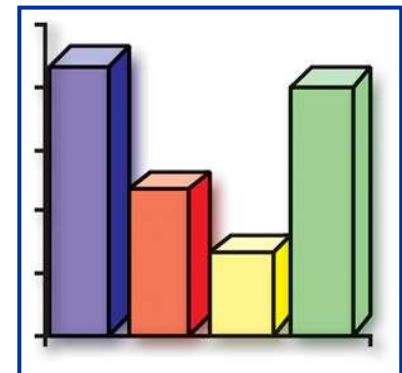
Questionnaires/Surveys

Why surveys?

- To capture attitudes and impressions of a large population
- To make sure that everyone in a organization has had an opportunity to make his/her voice heard
- Sufficient time for the respondents without any interference
- To be able to track changes over time

Advantages of surveys

- Everyone has an opportunity to provide their view
- The survey itself is a message – 'we care about your view'!
- Data can be processed statistically to identify differences between groups (e.g. functional groups or hierarchical levels)
- Areas for further investigation, through other modes of exploration, can be identified
- Survey data gives a baseline information to track over time to examine cultural changes with the passage of time



Disadvantages of surveys

- It is resource-intensive to plan, distribute, analyse and communicate survey results
- Surveys identify symptoms rather than causes
- So, difficult to extract underlying beliefs from apparent statistical picture
- The information collected is about what employees think – this is not the same as how they really act!
- Surveys are subject to response bias, e.g. respondents may feel that they should respond in certain ways
- Questionnaires say more about what the person asking questions; whereas it is important than what the respondent feels is important!

Proceeding with Questionnaire

Integrity must be assured
from two perspectives:

Integrity in
collecting and
handling data

Integrity in analysis
and presentation of
data

Proceeding with Questionnaire

- Clearly set the objective and identify the main areas to be explored
- Questionnaire should be small; leave the questions which doesn't add significant value to the analysis
- Well designed and easily understandable questionnaire is key to success
- Use close questions to make it easy to respond (with an opportunity to give optional remarks)
- Brief introduction defining the goal of the survey, and to realize the value of the response
- Develop clear perception that confidentiality will be maintained

Proceeding with Questionnaire

- Order the questions in a meaningful, logical and natural way with similarly themed questions grouped together
- Simple questions should be placed in start, to capture the attention and motivate the respondent to completely fill in the questionnaire
- Good Practice- Pilot the questionnaire with relatively small population with complementary trial analysis
- Revised strategy (on the basis of feedback of piloting) may maximize the response rate and minimize the chances of error during statistical analysis

Distribution strategy

- Try to engage the entire population to get the real and trustworthy picture of the organizational behaviours
- If not possible, then define sample size supporting successful analysis
 - ✓ Desired response rate is essential to avoid biases and over/under representation,

So:

- ✓ Randomly select a sample population with adjustment of size of sub-categories, such as department size, age group, pay scale, educational level etc. for good demography
- **Good Practice:** Send the questionnaire directly to respondents rather than to Managing Director, and make follow-up:
 - ✓ Maintain the confidentiality
 - ✓ To get the high response rate
 - ✓ To clarify any ambiguities raised by respondents

Distribution strategy

Response rate is very important for statistical validity

- Communication strategy,
 - how results will be taken care of = increased motivation to take part
- Management championing the survey
- Allocate work time for filling it out
- Rewards for filling in the questionnaire on time
- Group sessions to fill out questionnaire can be arranged
- Reminders
 - Response rate can be increased by monitoring the progress within different departments ('competition')

Analysing survey data

- It is easy to treat numbers as absolutes – but we should only see them as relative!
 - Hence, comparisons/correlations are the most interesting ones.
- Do not settle for simple means and standard deviations. Use other techniques such as Regression Analysis for developing correlations, and Principal Component Analysis to reduce the dimensions and to make the data understandable
 - This is a skill and requires interpretation and expertise!
- Ensure that no analysis on too small groups or other losses of anonymity can happen
 - E.g. a department with only one manager makes him/her easy to identify

Risks Involved in Analysis

Since well designed questionnaire is key to success during analysis phase, so the questionnaire should be designed in consultation with the person involved in analysis having sufficient expertize of statistical techniques; otherwise it may lead t inadequate data, and inadequate inference from data resulting in disappointment and frustration.

Risks Involved in Analysis

Reliance on personal proficiency in statistical data analysis using SPSS can avoid common source of errors-

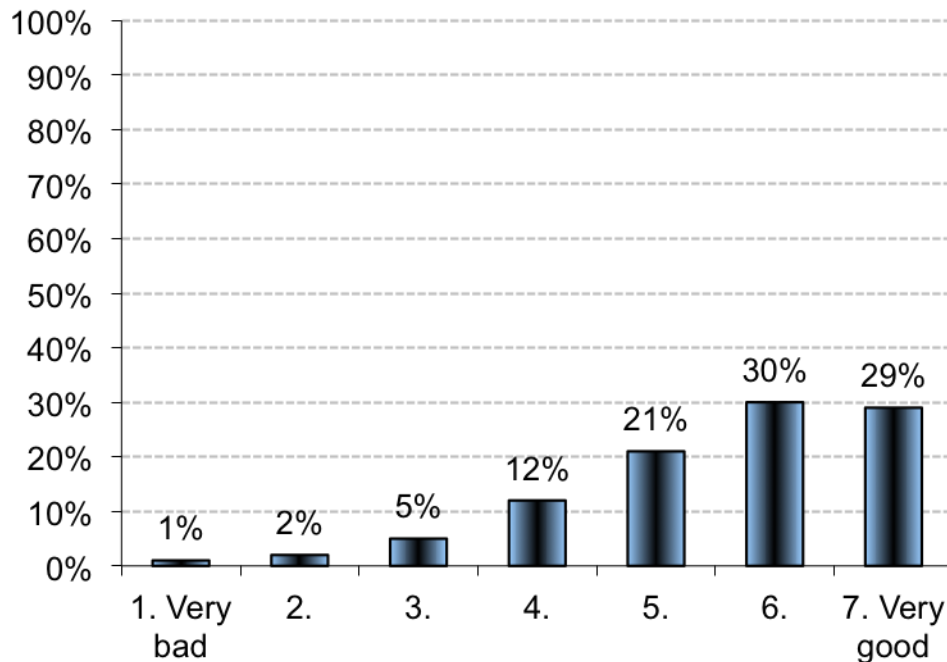
- Falling into trap of believing numerical results are more valid than other qualitative results
- Treating as averages as valid comparisons without considering statistical variances or standard deviations that accompany such averages
- Not recognizing that a smaller number of respondents means statistical considerations are even more important

Statistical Analysis

- Statistical Package for Social Sciences (SPSS) may be utilized
- Coding, entry and formulating the data
- Entry- Directly to SPSS or import through some other database
- Regression Analysis & Correlation may be used to detect relationship b/w variables
- Principal Component Analysis may be used for dimension reduction
- Demographic Analysis to check patterns, commonalities and discrepancies indicating the sub-cultures

Misleading Statistical Outputs

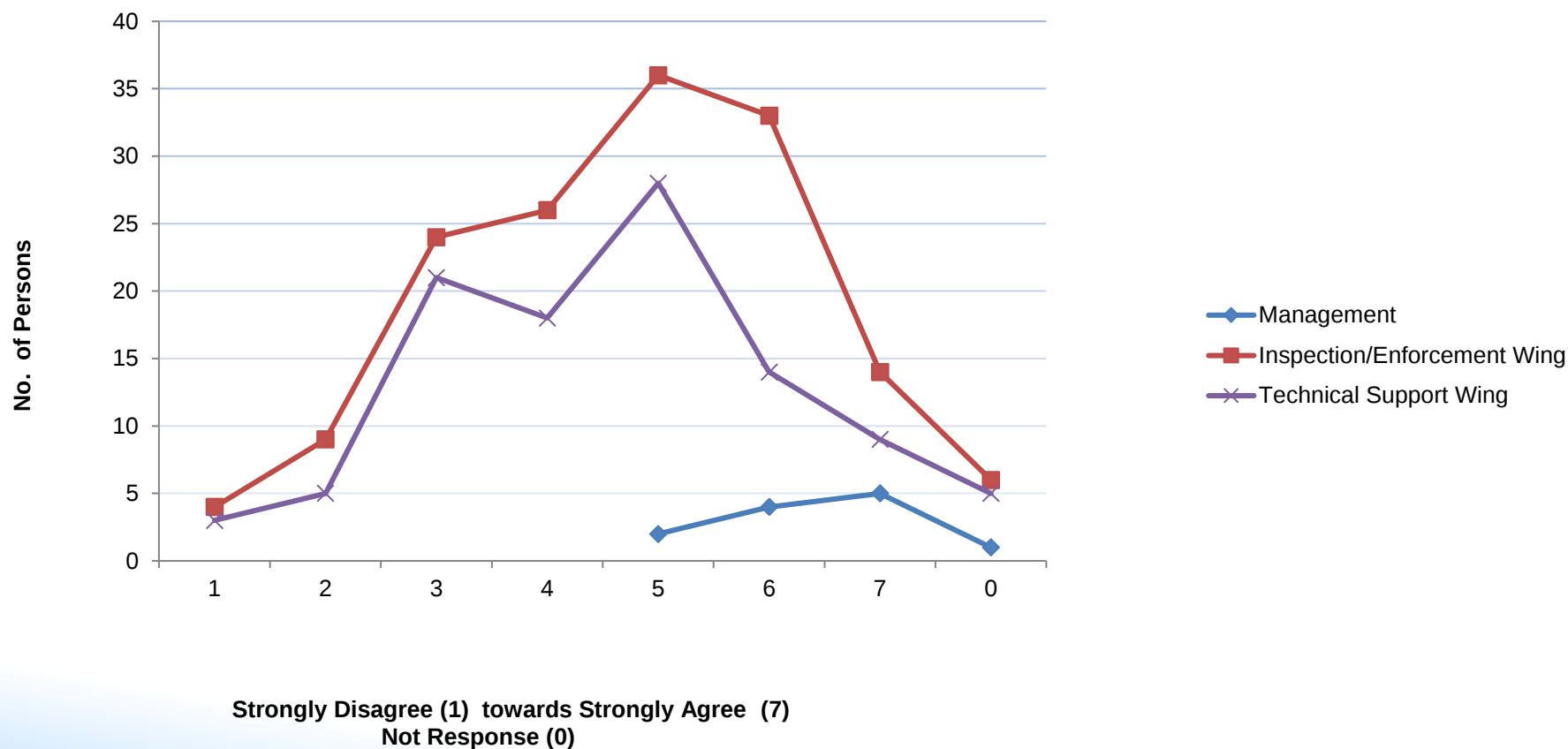
4. I think the communication of safety culture values is...



- We know nothing about response rate. Is this 27 out of 3000?
- We know nothing about standard deviation. Are the differences statistically significant?
- What is a 'good' level here?

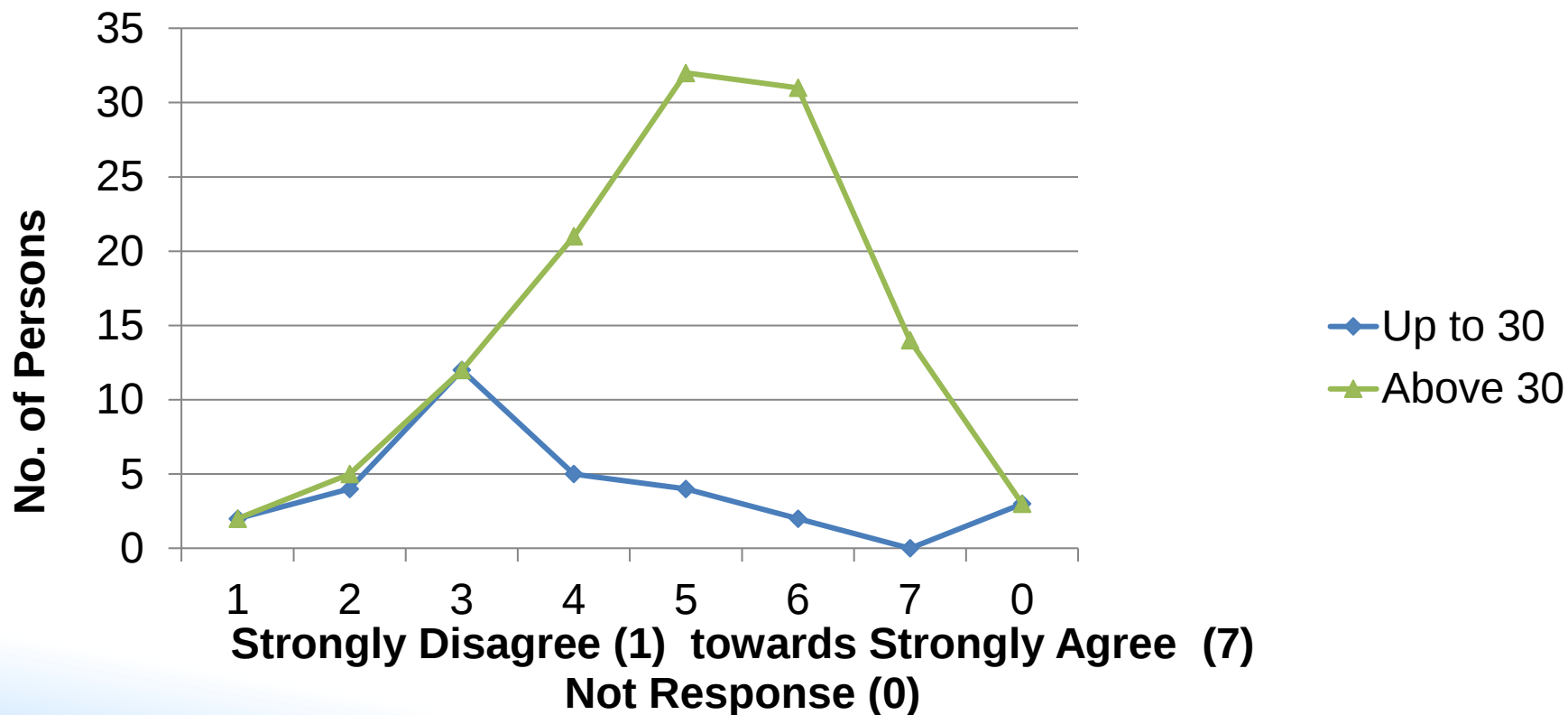
Misleading Statistical Output

Safety significant information is shared.



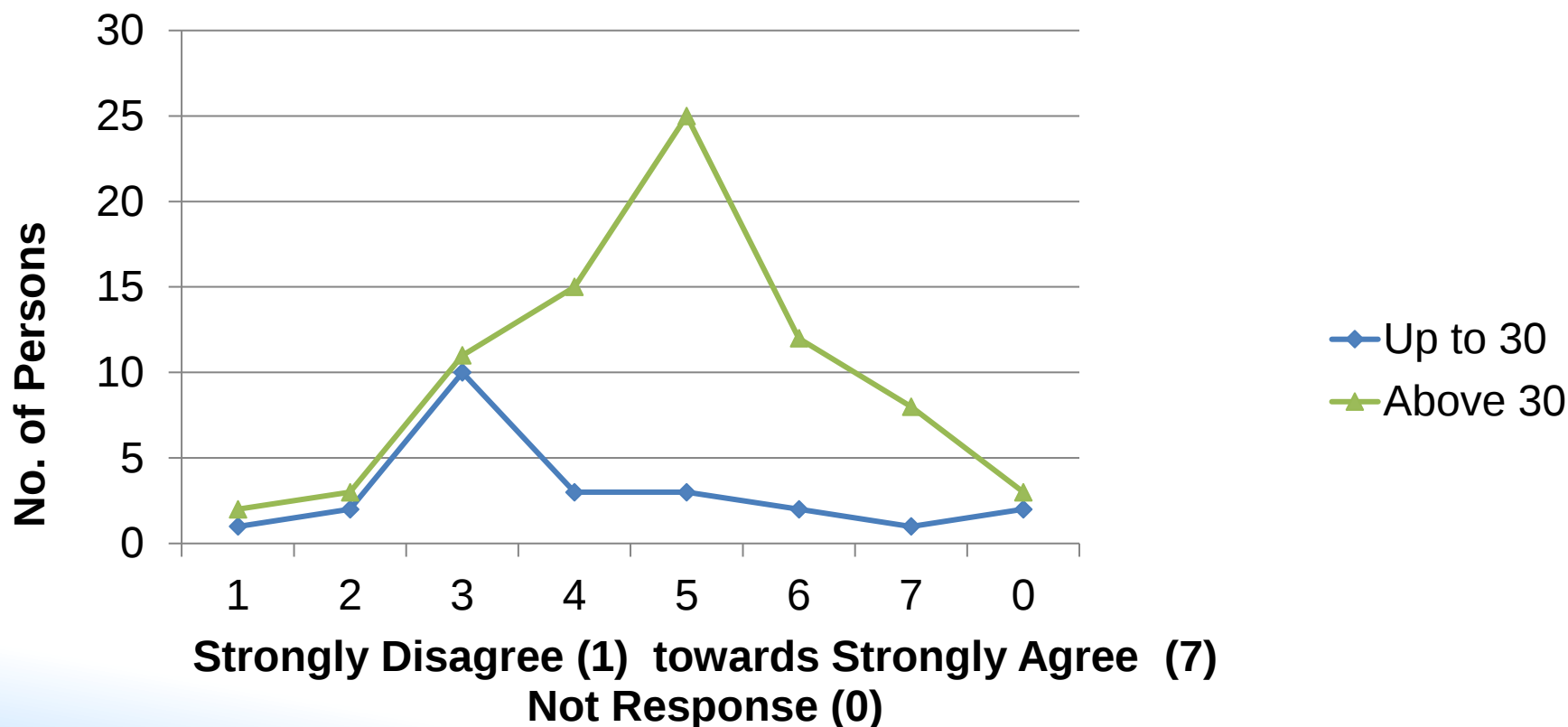
Misleading Statistical Output

**Safety significant information is shared.
(Inspection & Enforcement Age-Group Response)**



Misleading Statistical Output

**Safety significant information is shared.
(Technical Support Wing Age-Group Response)**



Transcripts of Response

- The response rate of inspection/enforcement wing and management was lower than that of rest of the organization.
- The response of youngster employees (up to 30 years) is consistent among all functional groups, and they think that the safety significant information is not shared. While the management thinks that safety information is shared.
- 4 is neutral on rating scale of 1 to 7, and the degree of consent of inspection/enforcement wing and technical support wing has weighted mean ranging from 4.7 to 5.3; that depicts that safety significant information is rarely shared.
-

Main Dimensions		Average Response for Constructs	Weighted Mean for Constructs	Weighted Mean for Dimensions
Safety Competence	Competency Development	310	6.7	5.62
	Learning/Training Opportunities	286	6.5	
	Team Effectiveness	280	6.6	
	Resources for safety	290	6.3	
	Tracking Safety Performance	280	6.1	
Involvement in Safety Processes	Motivation Factors	290	4.5	4.60
	Interdisciplinary Cooperation	258	4.7	
	Procedures & Working Practices	280	5.4	
	Job Relevant Knowledge	290	5.3	
	Dissemination of Information	300	5.3	
	Responsibility & Ownership	310	6.4	
Just Reporting Culture	No fear to report mistake	290	4.5	4.24
	Rewards & incentives	310	3.5	
	Learning from incidents	286	6.2	
Leadership	Change Oriented Leadership	277	5.9	4.79
	Pro-active approach in decision making	310	5.7	
	Employees empowerment	290	4.5	
	Visible leadership /Strive for Openness/Communication	290	5.5	
Personal	Opportunities of personal growth	310	6.2	5.59
	Job satisfaction/Work Environment	295	6.3	
	No Burn out	300	6.5	
	Time & Stress	305	4.5	

Handling the results

- Presented in tabular as well as in graphical forms
- Skills of statistical data interpretation in order to translate numerical figures into cultural expressions
- Most of the cultural expressions (underlying beliefs) cannot be explained due to restriction of closed questions
- These beliefs and basic assumptions may be identified by corroborative evidence from other tools as well as from optional remarks of the respondents
- Communicate results by various media, e.g. intranet and face-to-face meetings – highlights relevance to groups

Handling the results (Cont'd)

- 'A low response rate can indicate a safety culture issue
- Survey results should **not** be communicated separately from the rest of the self-assessment findings

Summary

- Valid surveys are difficult to develop
- Surveys are a good way to gather perceptions from large populations
- Surveys cannot be used alone because they say as much about what the surveyor thinks as what the respondents think
- Surveys are most useful for watching trends in responses over time
- Surveys must be analyzed by people with expertise in statistics and social sciences

Main Dimensions	Constructs	Average Response for Constructs	Weighted Mean for Constructs	Weighted Mean for Dimensions
Safety Competence	Competency Development	310	6.7	5.62
	Learning/Training Opportunities	286	6.5	
	Team Effectiveness	280	6.6	
	Resources for safety	290	6.3	
	Tracking Safety Performance	280	6.1	
Involvement in Safety Processes	Motivation Factors	290	4.5	4.60
	Interdisciplinary Cooperation	258	4.7	
	Procedures & Working Practices	280	5.4	
	Job Relevant Knowledge	290	5.3	
	Dissemination of Information	300	5.3	
	Responsibility & Ownership	310	6.4	
Just Reporting Culture	No fear to report mistake	290	4.5	4.24
	Rewards & incentives	310	3.5	
	Learning from incidents	286	6.2	
Leadership	Change Oriented Leadership	277	5.9	4.79
	Pro-active approach in decision making	310	5.7	
	Employees empowerment	290	4.5	
	Visible leadership /Strive for Openness/Communication	290	5.5	
Personal	Opportunities of personal growth	310	6.2	5.59
	Job satisfaction/Work Environment	295	6.3	
	No Burn out	300	6.5	
	Time & Stress	305	4.5	



IAEA

60 Years

Atoms for Peace and Development

Thank you!

